1. KOROLYUK, I. K.

2. USSR (600)

4. Trilobita--Irkutsk Region

7. New discovery of trilobita in the Cambrian of the Irkutsk cirque, Dokl AN SSSR, 89, No. 5, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April, 1953, Uncl.

KOROLYUK, I.K.

Some stromatolitha of Cambrian deposits in the Irkutsk amphitheater,
Trudy Inst.nefti 7:51-59 '56.   (MIRA 10:1)
              (Siberia—Geology, Stratigraphic)

KOROLYUK, I.K.

Effect of some invertebrates on the stratified texture of silt.
Trudy Murm. biol. sta. 4:172-183 '58.   (MIRA 11:5)

1. Institut nefti AN SSSR.
                        (Silt)   (Marine fauna)

26-58-5-38/57

AUTHOR: Korolyuk, I.K., Candidate of Geological-Mineralogical Sciences

TITLE: Rod-like Pebbles (Palochkoobraznyye gal'ki)

PERIODICAL: Priroda, 1958, Nr 5, pp 111-112 (USSR)

ABSTRACT: In Lake Baykal, in the delta of the Goloustnaya River and on
                 the nearby banks, 10 cm long, 0.5 to 1 cm wide and 3 to 4 mm
                 thick pebbles are found with smooth surfaces. They are com-
                 posed of strongly metamorphized clay shale which is somewhat
                 silicified and a little bit chloritized. When broken, they show
                 a thin laminar structure. These pebbles were washed out by
                 the Goloustnaya River from the Kocherga clay shale strata be-
                 ginning 8 km from the river mouth and extending to a depth of
                 20 - 25 km. The pebbles are widely scattered in the area by
                 changes of the river banks. The same kind of pebble have been
                 found at the mouth of the Malaya Kadil'naya River, 3 to 4 km
                 further south. There is 1 photograph.

ASSOCIATION: Institut nefti Akademii nauk SSSR, Moscow (Petroleum Institute of
                 the AS USSR, Moscow)

AVAILABLE: Library of Congress

Card 1/1   1.   Rock - Goloustnaya River

3(5)

AUTHORS: Medvedev, V. Ya., Korolyuk, I. K.   SOV/20-123-2-38/50

TITLE: The Age Problem of the Old Strata in the Kirgizskiy and
             Talasskiy Mountain Ranges of Northern Tyan'-Shan' (K voprosu o
             vozraste drevnikh tolshch Kirgizskogo i Talasskogo khrebtov
             Severnogo Tyan'-Shanya)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 123, Nr 2, pp 346-349
             (USSR)

ABSTRACT: Since the strata mentioned in the title contain few organic re-
             mains, the authors of this work concentrate on the stratigraphic
             succession of suites, whose age has remained unclear. Maps
             (scale of 1 : 100 000) compiled during the period 1953-57 have
             shown that the sections of metamorphic complexes in both of the
             mountain ranges mentioned are sharply distinct from each other,
             and, indeed, in the case of thickness as well as of composi-
             tion of the sediments. The surface of the Kirgizskiy Mountain
             Range and the east peak of the Talasskiy Ala-Tau are selected
             as Kirgizskaya structural facies zones. In contrast, the lar-
             gest part of the Talasskiy Ala-Tau region belongs to another

Card 1/4   structural zone, which is called Talasskaya. The rocks of the

The Age Problem of the Old Strata in the Kirgizskiy and Talasskiy Mountain
Ranges of Northern Tyan'-Shan'

metamorphic complex of the Kirgizskaya zone form a large
Makbal'skiy (Ref 3) anticlinorium. In the structure of its
old masses a clear zone distribution is discernable: 1) Makbal'-
skaya, 2) Nel'dinskaya, 3) Kaindinskaya, 4) Kenkol'skaya,
5) Karaarchinskaya. V. A. Nikolayev (Ref 3) assigned the suites
1-3 to the Lower Proterozoic and the remaining 2 to the Upper
Proterozoic. Contrary to his opinion, the authors find 2 large
interruptions in sedimentation: a) Between suites 3 and 4, and
b) Between suites 4 and 5. The section of the first suite is
concordant from the Uchkoshoyskaya suite continuously upward.
The first author, along with N. A. Chekalina, collected
stromatolithes from the latter and the Kenkol'skaya suite on
the Dzhel'dysu River in 1956-57. The authors select 6 suites,
after T. A. Dodonova (Ref 2), from the old masses of the
Talasskaya structural zone: 1) Karakul'dzhinskaya,
2) Uzunakhmatskaya, 3) Sarydzhonskaya, 4) Chatkaragayskaya,
5) Kyzyl-bel'skaya, and 6) Kurganskaya. The rocks of suites 1
and 2 are correlated with the Kenkol'skaya suite of the
Card 2/4   Kirgizskaya zone. Nikolayev considers the upper 4 suites as

SOV/20-123-2-38/50

The Age Problem of the Old Strata in the Kirgizskiy and Talasskiy Mountain
Ranges of Northern Tyan'-Shan'

Precambrian also and correlates them with the Algonkian of
North America. The first author, A. V. Grigor'yev, and G. N.
Bazhenova collected stromatolithes in the drainage area of the
Kurgan and the southern Bala-Chichkan Rivers in 1957. These
were identified by the second authoress. The study of the
stromatolithes is still at a stage where no age determinations
can be made on the basis of them. Nevertheless, the difference
between the individual types of stromatolithes from various
suites is striking. The following are described: Columnacollenia
talassica Koroljuk (Fig 2: 4,5) and Col. calciolada Kor.
(Fig 2: 1-3). There are 2 figures and 4 references, 3 of which
are Soviet.

ASSOCIATION: Institut nefti Akademii nauk SSSR (Petroleum Institute of the
               AS USSR)

PRESENTED: April 29, 1958, by S. I. Mironov, Academician

Card 3/4

SHISHKINSKAYA, Antonina Fedorovna; KOROLYUK, I.K., otv.red.; KORDE, K.B.,
        red.izd-va; SUSHKOVA, L.A., tekhn.red.

    [Ostracoda in Givetian deposits of the Saratov area of the Volga
    Valley] Ostrakody zhivetskikh otlozhenii Saratovskogo Povolzh'ia.
    Moskva, Izd-vo Akad.nauk SSSR, 1959. 67 p.   (MIRA 12:10)
            (Saratov Province--Ostracoda, Fossil)

KOROLYUK, I.K.

Lower Cambrian and Proterozoic stromatolites in the Irkutsk
amphitheater. Trudy Inst. geol. i razrab. gor. iskop. 1:112-
161 '60.   (MIRA 14:1)
              (Irkutsk Province--Algae, Fossil)

KOROLYUK, Irina Konstantinovna; MAKSIMOVA, S.V., otv. red.; CHEPIKOVA,
I.M., red.izd-va; YEPIFANOVA, L.V., tekhn. red.

[Comparative characteristics of Riphean and Cambrian formations
in the Lake Baikal region] Sravnitel'naia kharakteristika for-
matsii rifeia i kembriia Pribaikal'ie. Moskva, Izd-vo Akad. nauk
SSSR, 1962. 127 p. illus.   (MIRA 15:6)
          (Baikal Lake region—Geology)

LAGUTENKOVA, N.S.; KOROLYUK, I.K.

Lithology and the organic remains of some Lower Bavly dolomites in the western part of Bashkiria. Izv. vys. ucheb. zav.; geol. i razv. 6 no.4:66-76 Ap '63.   (MIRA 16:6)

1. Institut geologii i razrabotki goryuchikh iskopayemykh.
(Bashkiria—Dolomite)

KOROLYUK, I.K.; LAGUTENKOVA, N.S.

New finds of microscopic problematic organic remains in Bavly
sediments. Dokl. AN SSSR 161 no.2:455-458 Mr '65.

(MIRA 18:4)

1. Institut geologii i razrabotki goryuchikh iskopayemykh. Sub-
mitted July 13, 1964.

KOROLYUK, I. P.

Method for automatic isotope myelography. Med. rad. no.4:40-43
(MIRA 15:6)
'62.

1. Iz kafedry rentgenologii i radiologii (zav. - prof. Ye. L.
Kevesh) Kuybyshevskogo meditsinskogo instituta.

(SPINAL CORD--RADIOGRAPHY)

KEVESH, Ye.L.; KOROLYUK, I.P.

Teaching machines in roentgenology and radiology. Med. rad.
10 no.11:79-83 N '65.   (MIRA 19:1)

1. Kafedra rentgenologii i radiologii (zav. - prof. Ye.L. Kevesh)
Kuybyshevskogo meditsinskogo instituta.

VINOGRAD-FINKEL', F.R., prof.; KISELEV, A. Ye., dotsent, GINZBURG, F.G.,
FEDOROVA, L.I.; SEMENOVA, N.V.; KOROLYUK, K.I.; BURDYAGA, F.A.
TAL'SKAYA, I.N.; KUDRYASHOVA, S.N.

CHERNIKOV, Gennadiy Pavlovich, kand.geograf.nauk; DOBRIN, K.S., red.;
     KOROLYUK, L.M., red.; ROMANOVA, N.I., tekhn.red.

[Economy of France] Ekonomika Frantsii. Moskva, Izd-vo IMO,
1959. 325 p.   (MIRA 13:2)
          (France--Economic conditions)

MAYSKIY, Ivan Mikhaylovich, akademik; KOROLYUK, L.M., red.; ROMANOVA,
N.I., tekhn.red.

[Memoirs of the Soviet Ambassador to England] Vospominaniia
sovetskogo posla v Anglii. Moskva, Izd-vo In-ta mezhdunar.otno-
shenii, 1960. 142 p. (MIRA 13:7)
(Russia--Commerce--Great Britain) . (Great Britain--Commerce--Russia)
(Maiskii, Ivan Mikhailovich, 1884-)

MUKHIN, Aleksandr Ivanovich, kand.geograf.nauk; DOBRIN, K.S., red.;
KOROLYUK, L.M., red.; ROMANOVA, N.I., tekhn.red.

[Economic geography of the Federal Republic of Germany] Ekono-
micheskaia geografiia Federativnoi Respubliki Germanii. Moskva,
Izd-vo IMO, 1960. 256 p.   (MIRA 13:11)
          (Germany, West--Economic geography)

~~24(3)~~ 24.7700

663340

SOV/181-1-10-15/21

AUTHORS: Samoylovich, A. G., Korolyuk, S. L.

TITLE: The Theory of Elementary Excitation in Atomic Semiconductors

PERIODICAL: Fizika tverdogo tela, 1959, Vol 1, Nr 10,
             pp 1592 - 1599 (USSR)

ABSTRACT: A. F. Ioffe assumed in a paper (Ref 2) that in semiconductors
             excitons participate in the thermal conduction. The excitons
             may now be assumed to play a part in kinetic phenomena also
             as scattering centers of electrons and holes. The authors of
             the present paper investigate the interactions of electrons
             and holes with excitons, of excitons with phonons, etc. This
             is possible in the simplest way by considering electrons, ex-
             citons, and holes as elementary excitations in the crystal,
             which may interact among one another (cf. Refs 1-9). For a
             detailed investigation of kinetic phenomena it is necessary to
             have a Hamiltonian, which describes the behavior of semicon-
             ductors from the point of view of elementary excitations in
             consideration of interactions between them. Such a Hamiltonian
Card 1/3   was deduced in reference 10, but is was found to be incomplete,

because some important terms describing interaction among elementary excitations were lacking. It was the task of the present paper to set up such a complete Hamiltonian. One of the most important tasks to be performed was to exclude the "background", i.e. the regular separation of the ground state (cf. Refs 5-8). Interactions were taken into account according to a method by Bonch-Bruyevich (Ref 1), which was somewhat varied for the case under investigation. The simple model of an atomic semiconductor is investigated, where every atom has a saturated valence shell with two electrons. The following elementary excitations may occur: Electrons, holes, ortho- and paraexcitons.   The method of expanding the Hamiltonian is discussed in detail, and the quadratic terms occurring therein (systems (6) - (8)) are explicitly written down. Finally, also the Hamiltonians of third and fourth order are given, and individual terms, which describe special forms of interaction, (e.g. electrostatic interaction between the elementary excitations in the $\mathfrak{H}^{(4)}$: formula (26), electrostatic interaction between holes and electrons :(27), between exitons and holes and electrons: (28)) are written down. There are 12 references, 11 of which

Card 2/3

The Theory of Elementary Excitation in Atomic
Semiconductors

663340

SOV/181-1-10-15/21

are Soviet.

ASSOCIATION: Institut poluprovodnikov AN SSSR Leningrad (Institute for Semi-
conductors, AS USSR, Leningrad). Chernovitskiy gosudarstvennyy
universitet (Chernovtsy State University)

SUBMITTED: February 20, 1959

Card 3/3

S/181/62/004/003/033/045
B108/B104

24.7600

AUTHOR: Korolyuk, S. L.

TITLE: Theory of exciton heat conduction

PERIODICAL: Fizika tverdogo tela, v. 4, no. 3, 1962, 790-800

TEXT: In order to calculate the heat conduction caused in semiconductors by excitons the author derived their non-equilibrium velocity distribution function. For this purpose the Hamiltonian for a system of elementary excitations interacting with one another as derived in a paper by A. G. Samoylovich and S. L. Korolyuk (FTT, 1, 1992, 1959) is used. The non-equilibrium distribution function is deduced according to a method presented by A. G. Samoylovich et al. (FTT, Sb., 2, 121, 1959). This method consists in replacing the term $(1 - \Phi(t))^{-1}$ by $\exp(-\Phi(t))$ in the non-equilibrium term of the distribution function

$$n'_3(k_3) = \frac{1}{k_0} \langle \hat{M}^0(k_3) \rangle \int_0^\infty [1 - \Phi(t)] dt.$$

Card 1/3

Theory of exciton heat conduction

which is given as

$$n'_3(k_3) = \frac{1}{k_0} \int_0^\infty dt \, \mathrm{Re} \, \mathrm{Sp} \, \rho_0 \left\{ \hat{M} + \frac{1}{\hbar} \int_0^t dt' \int_{-i\hbar\beta}^{t'} dt'' \mathcal{H}_1(t'') \times \right. \tag{12}$$

$$\left. \times [\hat{M}, \mathcal{H}_1(t')] - \frac{1}{\hbar^2} \int_0^t dt' \int_0^{t'} dt'' [\hat{M}, \mathcal{H}_1(t')] \mathcal{H}_1(t'') \right\} \vartheta(k_3).$$

where $\vartheta(\vec{k}_3) = \frac{1}{2}\left[\hat{n}_3(\vec{k}_3) - \hat{n}_3(-\vec{k}_3)\right]$, $\vec{k}_3$ is the quasimomentum of the exciton, $\hat{n}_3(\vec{k}_3)$ - population number operator. The exciton relaxation times for scattering from acoustic phonons, spontaneous decay into electron and hole, and decay into phonons are calculated. The reciprocals of these quantities add up into the inverse overall relaxation time. With the aid of the obtained distribution function the coefficient of exciton heat conduction is calculated. The two limiting cases $\beta \Delta E \gg 1$ and $\beta \Delta E \ll 1$ ($\beta = 1/k_0 T$) are considered. Professor A. G. Samoylovich is thanked for help. There are 19 references: 13 Soviet and 6 non-Soviet. The three references to English-language publications read as follows: J. A. McLennan. Phys. Rev., 115, 1405, 1959; Matsudaiva. Progr. Theor.

Card 2/3

AUTHOR: Korolyuk, S. L.

TITLE: Exciton entrainment effect by charged quasi-particles

PERIODICAL: Fizika tverdogo tela, v. 5, no. 1, 1963, 352-353

TEXT: This study is based on the Hamiltonian

$$\hat{\mathcal{H}} = \sum R_i(\mathbf{k}, \mathbf{k}_i, \mathbf{k}', \mathbf{k}_i')[\hat{\gamma}_k^+ \hat{a}_{k'z} \hat{a}_{k_i o}^+ \hat{a}_{k_i'} - \text{...}^+ \quad (1)$$
$$+ 2s_i \hat{\gamma}_k^+ \hat{a}_{k'o} \hat{a}_{k_i o}^+ \hat{a}_{k_i'}] \delta(\mathbf{k} - \mathbf{k}' + \mathbf{k}_i - \mathbf{k}_i') + \text{к. c.}$$

which describes the scattering of paraexcitons by electrons and holes when the transformations of paraexcitons into orthoexcitons and vice versa are taken into consideration. $\hat{\gamma}_k^+$ is the creation operator, $\hat{\gamma}_{\vec{k}}$ is the annihilation operator of paraexcitons with spin s and quasi-momentum k; $\hat{a}_{k_i s}^+$ and $\hat{\alpha}_{\vec{k}\Sigma}^+$ and $\hat{\alpha}_{\vec{k}\Sigma}$ are the analogous operators for orthoexcitons; $\hat{a}_{k_i s}$ is the electron operator (i = 1) and the hole operator (i = 2),

Card 1/3

Exciton entrainment effect by...

respectively. The coefficients R_i determine the probabilities of the corresponding processes. The entrainment velocity $\bar{v}_z = eE_z\tau/m$ is calculated by dividing the total exciton flux in z-direction,

$I_z = \sum_k \hbar k_z \bar{n}_k'/m$, by the exciton equilibrium number. $\bar{n}_k'$ is the non-equilibrium supplement of the exciton distribution function, m is the effective exciton mass. $\bar{l}_z = eE_z\tau t/m$ is the mean diffusion length of an exciton, where t is the mean life-time of an exciton. The relaxation time of scattering by electrons is

$$\tau = \frac{\hbar^4 N_0^2}{2^{3/2}\pi^2 |R_1|^2 (\Delta E^\gamma - \Delta E^\alpha)^{1/2} n_0 m_1^{3/2}}, \quad (6),$$

where N_0 is the number of crystal sites per unit volume, n_0 is the electron equilibrium number at a given temperature, ΔE^γ is the activation energy for paraexcitons, and ΔE^α is that for orthoexcitons. According to Ya. F. Gross,

Card 2/3

KOZYRIN, A.K., dotsent; KOROLYUK, T.I., inzh.; SAPOZHNIKOV, V.M., inzh.

Determining the parameters of electrically conductive beds from electric shot-hole prospecting data. Izv. vys. ucheb. zav.; gor. zhur. no. 7:3-10 '63.

(MIRA 16:9)

1. Sverdlovskiy gornyy institut imeni V.V.Vakhrusheva. Rekomendovana kafedroy rudnoy geofiziki Sverdlovskogo gornogo instituta.

(Electric prospecting)

BRODI, S., nauchnyy sotrudnik; KOROLYUK, V., kand. fiz.- matem. nauk

Mass servicing as a mathematical problem . Nauka i zhyttia 13 no.10:6-7 N '63.

(MIRA 16:12)

1. Institut matematiki AN UkrSSR (for Brodi).

USSR/Miscellaneous - History

Card 1/1   : Pub. 86 - 2/34

Authors   : Korolyuk, V. D.

Title   : Foremost historical achievement

Periodical   : Priroda 1, 15-20, Jan 1954

Abstract   : Editorial is presented in celebration of the greatest historical
                achievement of Russia, namely, the 300th anniversary of the annexation
                of the Ukraine by Russia (January 1654).

Institution : .....

Submitted   : .....

KOROLYUK, V.D., kandidat istoricheskikh nauk; MILLER, I.S., kandidat isto-
richeskikh nauk.

Discussion of the work of Polish historians. Vest.AN SSSR 26 no.5:
69-71 My '56.   (MIRA 9:8)
                  (Poland--Historiography)

KOROLYUK, V.S.

Gnedenko, B. V., and Korolyuk, V. S. Some remarks on the theory of domains of attraction of stable distributions. Dopovidi Akad. Nauk Ukrain. RSR 1950, 275-278 (1950). (Ukrainian. Russian summary)

This note is meant as an addendum to Chapter 7 of a recent book by Gnedenko and Kolmogorov [Limit distributions for sums of independent random variables. Moscow-Leningrad, 1949; these Rev. 12, 839]. Since this book is unavailable to the reviewer and to most readers, we refer to P. Lévy, Théorie de l'addition des variables aléatoires [Gauthier-Villars, Paris, 1937]. Let $\{x_n\}$ be a sequence of mutually independent random variables with a common distribution function $F(x)$. As is shown in the two texts, in order that there exist sequences A_n and B_n of numbers such that the distribution of the variables $(X_1 + \cdots + X_n)B_n - A_n$ converges, it is necessary and sufficient that $F(x)$ belongs to the domain of attraction of a quasi-stable law [Lévy, loc. cit., p. 210; the two texts apparently use different terminologies]. The authors give a new necessary and sufficient condition that this be the case. This condition involves the asymptotic behavior of the characteristic function near the origin. They also show A_n can be expressed in terms of B_n.
W. Feller (Princeton, N. J.).

KOROLYUK, V. S.

Mathematical Review.
June 1954
Analysis

10-7-54

(3)

Korolyuk, V. S. On a problem of B. V. Gnedenko. Dopo-
vidi Akad. Nauk Ukrain. RSR 1951, 21–23 (1951).
(Ukrainian)

The author constructs a distribution function $F(x)$ such
that: (1) the symmetrized distribution $F(x)*\{1 - F(-x)\}$
is stable of order α, and (2) $F(x)$ does not belong to the
domain of attraction of any law.   *W. Feller.*

KOROLYUK, V.S.; YAROSHEVS'KYY, B.I.; HNYEDENKO, B.V., diyanyy chlen.

Investigation of maximal deviation in two empirical distributions. Dop.AN
URSR no.4:243-247 '51.   (MLRA 6:9)

1. Akademiya nauk Ukrayins'koyi RSR (for Hnyedenko). 2. Artemivs'kyy
uchytel's'kyy instytut i Kyyivs'kyy derzhavnyy universytet (for Korolyuk
and Yaroshevs'kyy).   (Probabilities)

KOROLYUK, V. S.

Gnedenko, B. V., and Korolyuk, V. S.   On the maximum discrepancy between two empirical distributions. Dok-lady Akad. Nauk. SSSR (N.S.) 80, 525–528 (1951). (Russian)

Let $(x_1, \cdots, x_n)$ and $(y_1, \cdots, y_m)$ be two collections of mutually independent random variables with a common continuous distribution $F(t)$. Let $F_1(t)$ and $F_2(t)$ be the corresponding empirical distributions and

$$D^+ = \sup\{F_1(t) - F_2(t)\}, \quad D = \sup|F_1(t) - F_2(t)|.$$

Smirnov gave the limiting distributions of the random variables D^+ and D as $n, m \to \infty$. [For new derivations cf. Feller, Ann. Math. Statistics 19, 177–189 (1948); Doob, ibid. 20, 393–403 (1949); Kac, Proc. Nat. Acad. Sci. U.S.A. 35, 252–257 (1949); these Rev. 9, 599; 11, 43; 10, 614]. There is a considerable interest in more precise estimates for finite n, m. The authors show that when $n = m$ and c is an integer, one has the exact distributions

$$\Pr\{nD^+ < c\} = 1 - \binom{2n}{n-c} \div \binom{2n}{n},$$

$$\Pr\{nD < c\} = \binom{2n}{n}^{-1} \sum (-1)^k \binom{2n}{n-kc},$$

the summation extending over $k = 0, \pm 1, \cdots, \pm[n/c]$. For the proof let $z_1, \cdots, z_{2n}$ be the collection $x_1, \cdots, y_n$ ordered according to magnitude and put $\xi_k = \pm 1$ or -1 according as $z_k = x$, or $z_k = y$. The variables ξ_k determine a random walk, and the theorem becomes merely a restatement of known results concerning the ruin problem.   W. Feller.

Source: Mathematical Reviews.

Vol 13 No. 6

KOROLIUK, V. S.

Dissertation: -- "On the Points of Agreement Between Kolmogorov and Smirnov."
Cand Phys-Math Sci, Inst of Mathematics, Acad Sci Ukrainian SSR, 29 Jun 54.
(Pravda Ukrainy, Kiev, 19 Jun 54)

SO: Sum 318, 23 Dec. 1954

KOROLYUK, V.S. (Kiyev)

Method for increasing the asymptotic accuracy of the method of meshes.
Ukr.mat.zhur. 7 no.4:379-387 '55.
(Harmonic finctions)   (MLRA 9:5)

U S S R .

Korolyuk, V. S. On the discrepancy of empiric distribu
tions for the case of two independent var

s..rauness ot ni for a figure

J. Wolfowitz (Ithaca, N. Y.)

KOROLYUK, V. S.

USSR/Mathematics

Card 1/1   Pub. 22 - 2/47

Authors   :   Korolyuk, V. S.

Title   :   On a method of increasing the asymptotic accuracy of the network method

Periodical :   Dok. AN SSSR 101/6, 985 - 987, Apr. 21, 1955

Abstract   :   A method for increasing the asymptotic accuracy in solving equations by
                the network method is discussed. The method consists in substituting
                the differential Laplace operator by the simplest finite difference op-
                erator. Five references: 2 USSR, 1 Brit., 1 USA and 1 Germ. (1933-1954).

Institution :   Acad. of Sc., USSR, Institute of Mathematics

Presented by: Academician A. N. Kolmogorov, January 8, 1955

KOROLYUK, V. S.

Transactions of the Third All-union Mathematical Congress   Call Nr: AF 1108825
Jun-Jul '56, Trduy '56, V. 1, Sect. Rpts., Izdatel'stvo AN SSSR, Mosocw, 1956, 237 pp. (Cont.)Moscow,
There is 1 French reference.

Section of Computer Mathematics.

Reports of the following personalities are included: 192-198

Blagoveshchenskiy, Yu. V. (Kiyev). On Some Approximate
Methods of the Solution of Partial Differential Equations.   192

Korolyuk, V. S. (Kiyev), Yushchenko, Ye. L. (Kiyev).
Determination of Contour of the Function of Two Variables
on   Quick-acting Electronic Calculating Machines.   192

Kulagina, O. S. (Moscow). On Translation by Machinery
From French Into Russian.

Lyapunov, A. A. (Moscow). On Logical Program Charts.   192-193

Neyshuler, L. Ya. (Moscow). Tabulation of Functions   193
and Applications.
Card 62/80
                                                                             193-194

KOROLJUK, V.S.

SUBJECT   USSR/MATHEMATICS/Theory of probability   CARD 1/2   PG - 896
AUTHOR   KOROLJUK V.S.
TITLE   Asymptotic expansions of the distribution for the maximum of
             the sums of Bernoulli variables.
PERIODICAL   Doklady Akad. Nauk 108, 183-186 (1956)
             reviewed 6/1957

Let $\xi_1, \ldots, \xi_n$ be correspondingly distributed, independent Bernoulli
variables which assume two values with the probabilities p and $q=1-p$ such
that $E(\xi) = 0$ and $\mathrm{var}(\xi) = 1$. Then for the sums $S_k = \sum_1^k \xi_n$, $S_0 = 0$ it is
proved:

$$p(\max_{0 \leq k \leq n} S_k < z) = \sqrt{2/\pi} \cdot \int_0^z \exp(-\tfrac{1}{2}x^2)\,dx + (p-q)(z^2-2)\exp(-\tfrac{1}{2}z^2)/3\sqrt{2\pi\,npq} + O(1/npq),$$

and an analogous formula for $p(\max |S_k| < z)$. The method of the proof consists
in establishing a difference equation for the conditional probabilities

Inst. of Mathematics, Acad Sci USSR

Doklady Akad. Nauk 108, 183-186 (1956)   CARD 2/2   PG - 896

$p(\max_{0 \leq r \leq k} S_r < z \mid S_k = x)$ which is solved with the aid of the Green's functions
of this difference equation. By the limiting process to $q = 0$ for $nq \longrightarrow \lambda$
there arises an asymptotic formula for the distribution of the maximal
value of the sums of independent Poisson-variables.

13.2941
16.6200
16.6800

89561

S/044/60/000/008/033/035
C111/C222

AUTHORS: Korolyuk, V.S., Nishnik, L.P., and Yushchenko, Ye.L.

TITLE: Programming of the tables for the optimal methods of the statistical acceptance inspection

PERIODICAL: Referativnyy zhurnal. Matematika, no.8, 1960, 235, abstract no. 9618. Sb. tr. Vychisl. tsentra. AN Ukr SSR, 1958, no.3, 9-17

TEXT: V.S.Mikhalevich has shown: the choice of the optimal method of the acceptance inspection according to A.N.Kolmogorov leads to the solution of the inhomogeneous difference equation $\varphi(k,n) = \mu(k,n)\varphi(k+1, n+1) + (1-\mu(k,n))\varphi(k,n+1) + c$ with an unknown boundary and to the determination of this boundary under the condition that at the lower boundary it holds $\varphi(k,n) = \mu(k,n)$ and at the upper boundary it holds $\varphi(k,n) = p_0$, where the function $\mu(k,n)$ and the constant p_0 can be calculated.

In the present paper, the authors describe a method for the numerical solution of this problem, where the programming is made on the small electronic computer "МЭСМ" (MESM) of the Academy of Sciences of the Ukrainian SSR. The method guarantees an economic utilization of the

Card 1/2

89561

Programming of the tables for...

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C111/C222

storage cells of the device and a shortened obtaining of the data for which the information which is interesting for the problem remains preserved.

[Abstracter's note: The above text is a full translation of the original Soviet abstract.]

Card 2/2

KOROLYUK, V.S.

One programming method [with summary in English]. Dop.AN URSR
no.12:1292-1295 '58.   (MIRA 12:1)

1. Institut matematiki AN USSR. Predstavil akademik AN USSR
B.V.Gnedenko [B.V.Hniedenko]
                (Programming (Electronic computers))

AUTHOR: Korolyuk, V.S.   SOV/38-22-5-9/10

TITLE: Letter to the Editor (Pis'mo v redaktsiyu)

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya matematicheskaya, 1958,
             Vol 22, Nr 5, p 735 (USSR)

ABSTRACT: This is a correction of essential errors in the author's
             paper published in Izvestiya Akademii nauk SSSR, Seriya
             matematicheskaya, 1955, Vol 19, pp 103-124 . The theorems 1,2
             and 3 remain true only in special cases, the theorem 4 is
             wrong.

Card 1/1

16(1),16(2)   1
AUTHOR: Korolyuk,V.S.   05790
                                                   SOV/52-4-4-1/13
TITLE: Asymptotical Analysis of Maximum Deviation Distributions in the
             Bernoulli Scheme

PERIODICAL: Teoriya veroyatnostey i yeye primeneniya, 1959,
             Vol 4, Nr 4, pp 369-397 (USSR)

ABSTRACT: The present paper gives a survey on the methods for the asymptotic
             developments for the distribution of maximal deviations in the
             Bernoulli scheme and in its limiting case, the Poisson scheme.
             In the first part the author discusses in detail the possibility
             to obtain explicit expressions for the distribution of the
             maximal deviations; furthermore the results of an asymptotic
             investigation of these expressions are discussed. In the second
             part, for the construction of the asymptotic developments the
             author starts from the difference equation which is satisfied by
             the sought distribution. The maximal deviations between the
             theoretical and the empirical distribution functions as well as

Card 1/2

Asymptotical Analysis of Maximum Deviation   05790
Distributions in the Bernoulli Scheme   SOV/52-4-4-1/13

             between two empirical distribution functions are considered.
             The author mentions P.L.Chebyshev, A.N.Kolmogorov, N.V.Smirnov,
             B.V.Gnedenko, Yu.V.Prokhorov, V.M.Zolotarev, A.A.Borovkov,
             I.I.Gikhman, N.M.Krylov, N.N.Bogolyubov, M.I.Vishik, and L.A.
             Lyusternik.
             There are 47 references, 32 of which are Soviet, 2 Chinese,
             10 American, 1 Swedish, 1 French, and 1 Dutch.
SUBMITTED: June 2, 1959

Card 2/2

16(1)   SOV/21-59-2-2/26
AUTHOR: Korolyuk, V.S., and Letichevskiy, A.A. (Korolyuk, V.S.,
            and Letychevs'kyy)
TITLE: About One Class of Address Algorithms (Ob odnom klas-
            se adresnykh algoritmov)

PERIODICAL: Dopovidi Akademii nauk Ukrains'koi RSR, 1959. Nr 2,
            pp 116-119 (USSR)

ABSTRACT: In this article the authors amplify a section /Ref 1/
            dealing with the equivalence of algorithms of address
            class limited to operations of "segregation of the
            address' contents" and "carry-over by the address",
            by way of presenting of an algorithm for examination
            of equivalence of two given address algorithms. De-
            signations are standard mathematical. Designations
            agreed upon are: $\mathcal{U}$ some number of construction ele-
            ments. Its elements, called the addresses are a,
            b,...,x,y. Final designation of $\mathcal{U}$ is A.Expression
            a(AB)=(aA)B in final form is designated E. Designa-
Card 1/2   tions p and g are elements of carry-over. β is opera-

About One Class of Address Algorithms   SOV/21-59-2-2/26

> tor while p. is elementary carry-over. Article con-
> tains and examines two theorems on the above subject.
> There is 1 Soviet reference.

ASSOCIATION: Institut matematiki i raschðtnyy tsentr AN UkrSSR
(Institute of Mathematics and Calculation Center
of the AS UkrSSR)

PRESENTED: By B.V. Gnedenko, Member of the AS Ukr SSR

SUBMITTED: November 17, 1958

Card 2/2

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C111/C222

AUTHOR: Korolyuk, V.S.

TITLE: An asymptotic investigation of the distributions of the
            maximum deviations in the Bernoulli scheme

PERIODICAL: Referativnyy zhurnal, Matematika, no. 8, 1962, 3,
            abstract 8V18. ("Teoriya veroyatnostey i yeye primeneniya",
            1959, no. 4, 369-397)

TEXT: The first part of the paper - method of investigation for
rigorous expressions - consists of 3 sections. In the first section the
author considers random walks in the Bernoulli scheme. The determination
of the distribution for maximum deviations is reduced to the solution
of a difference equation. In two special cases an explicit solution is
obtained. In the second section the author obtains an expression for
the distribution of the maximum deviations in the Poisson case. In the
third section he obtains asymptotic estimations of the formerly
obtained explicit expressions. The second part of the paper is devoted
to the deduction of asymptotic expansions for the distributions of the

Card 1/2

maximum deviations in the Bernoulli scheme. The asymptotic
investigation of the solutions of the difference equation, which is
satisfied by the distributions, is carried out according to the
method of the exhaustion of the discrepancies.

[Abstracter's note : Complete translation.]

Card 2/2

AYZENBERG, Yu.B., inzh.; KOROL'KOV, V.S., inzh.

Performance of fluorescent lamps in circuits using incandescent
lamps instead of chokes. Svetotekhnika 5 no.5:19-25 My '59.
(MIRA 12:7)

1. Vsesoyuznyy svetotekhnicheskiy institut.
(Fluorescent lamps)

16(1)

AUTHOR: Korolyuk, V.S.

SOV/21-59-7-3/25

TITLE: Asymptotic Analysis of the Probability of Absorption
               in a One-dimensional Scheme of Random Roving with a
               Lattice Distribution of Probabilities of Crossing

PERIODICAL: Dopovidi Akademii Nauk Ukrains'koi RSR, 1959, Nr 7,
                           pp 702-707 (UkrSSR)

ABSTRACT: In a one-dimensional scheme of random roving with a
               lattice distribution of probabilities of crossing, an
               asymptotic representation is given for the probabili-
               ty, $u_\varepsilon(x)$ of reaching the region $x \lessgtr 0$ when starting
               from point x, without getting into the region $x \geq 1$,
                in the form of series with powers of ε (where ε is
               the maximum step of distribution of the probability
               od crossing. There are 22 mathematic formulas and 4
               4 references, 3 of which are Soviet and 1 English

ASSOCIATION: Instytut matematyky AN URSR   (Institute of Mathe-
               matics AS UkrSSR)

Card 1/2

GNEDENKO, B.V.; KOROLYUK, V.S.; AND SKOROKHOD, A.V.

"On Asymptotic Distributions in the Theory of Probability."

[Kiev State University imeni T.G.Shevchenko]

report to be presented 27 June 1960 at the 4th Symposium on Mathematics Statistics and Probability - Berkeley, California, 20 Jun- 30 Jul 1960.

Korolyuk, V.S.

PHASE I BOOK EXPLOITATION   SOV/4279

Problemy kibernetiki, vyp. v (Problems of Cybernetics, no. 4) Moscow, Fizmatgiz, 1960. 257 p. 10,000 copies printed.

Compilers: O.V. Vakulovskaya, I.L. Gavrilova, B.Yu. Pilichuk, Ya.I. Starobogatov, V.A. Sharkman, and S.V. Yablonskiy; Eds.: O.V. Vakulovskaya, Ya.I. Starobogatov, and M.L. Piniuov; Tech. Ed.: S.M. Akhlamov; Chief Ed.: A.A. Lyapunov.

PURPOSE: This book is intended for mathematicians and scientists interested in the problems of cybernetics and systems control.

COVERAGE: The book is a collection of articles on cybernetics, the theory of control systems, information theory, programming, computers, control processes in living organisms, and mathematical linguistics. The author thanks the following persons for their assistance: F. Ya. Veselnovskiy, A.P. Ierebov, V.M. Zolotarev, V.M. Korobkov, V.I. Levenshteyn, O.B. Lupanov, L.A. Serustynov, and M.L. Tselkin. References accompany several of the articles.

TABLE OF CONTENTS:

From the Editor

I. GENERAL PROBLEMS

Lupanov, O.B. On the Asymptotic Values of the Numbers of Graphs and Networks with n Terminals ... 5

Sharnyakov, L.A. On One Class of Automatons (Nervous Systems) ... 12

II. THEORY OF CONTROL SYSTEMS

Gavinov, S.V. Electric Modeling of Homeostatic Systems ... 57

Mudrov, V.I. On the Problem of Determining the Breakdown Probability in Multilevel Editing Line Systems of the Mixed Type ... 45

III. THEORY OF INFORMATION

Kharkevich, A.A. The Value of Information ... 53

IV. PROGRAMMING

Arsentyeva, I.S. On Some Transformations of Programming Schemes ... 59

Podorvy, V.A. Methods of Automating Programming on Computers ... 66

Korolyuk, V.S. On the Concept of an Address Algorithm ... 71

V. COMPUTERS

Kartsev, M.A. Logical Methods of Accelerating Multiplication in Digital Computers ... 111

VI. CONTROL PROCESSES IN LIVING ORGANISMS

Shmalgauzen, I.I. Bases of the Evolutionary Process in the Light of Cybernetics ... 121

Maksimchuk, A.A. Type of Biological Control Systems and Their Adaptive Value ... 151

Napalkov, A.V. Some Principles of Brain Operation ... 163

VII. PROBLEMS OF MATHEMATICAL LINGUISTICS

Frumkina, R.M. Some Facts About the Distribution of Multiroot Verb Forms in Connection With the Problem of Compiling a Dictionary of Roots for Machine Translation ... 197

Zasorina, O.I. On Machine Translation From French Into Russian.
II. Algorithm for Translation From French Into Russian ... 207

AVAILABLE: Library of Congress

Card 3/3

HM/gw/hmm
10-3-60

KOROLYUK, V. S.

Concepts of address algorithms. Prob. kib. no.4:95-110 '60.
(MIRA 13:8)

(Programming (Electronic computers))

KOROLYUK, V.S. (Kiyev)

Asymptotic of distributions in the scheme of wandering with lattice
distribution of probabilities for a transition. Teor. veroiat.
i ee prim. 5 no.2:255-256 '60.   (MIRA 13:9)
                    (Distribution (Probability theory))

ZOLOTAREV, V.M. (Moskva); KOROLYUK, V.S. (Kiyev)

New method in the problems on wandering on a semiaxis. Teor.
veroiat. i ee prim. 5 no.2:263-264 '60.   (MIRA 13:9)
(Probabilities)

P71/44

S/041/60/012/003/008/011
C111/C222

16.3900

AUTHOR: Korolyuk, V.S.

TITLE: On the Asymptotic Behavior of the Solutions of Difference Equations With a Small Parameter

PERIODICAL: Ukrainskiy matematicheskiy zhurnal, 1960, Vol. 12, No. 3, pp. 342 - 346

TEXT: The author considers the ordinary difference equation

$$(1) \quad P_\varepsilon \ U_\varepsilon \ (x) = \sum_{k=-\infty}^{\infty} P_k u_\varepsilon \ (x + k\varepsilon) = 0$$

The sought function $u_\varepsilon (x)$ is obtained on the interval $(0,1)$ with respect to the given values for $x \leq 0$ and $x \geq 1$. It is assumed : 1) the P_k depend sufficiently smooth on ε, and for an integral positive N they satisfy the condition

$$(2) \quad \sum_{k=-\infty}^{\infty} | k |^{N+1} | P_k | \leq C < \infty .$$

Card 1/ 4

87144

On the Asymptotic Behavior of the Solutions of   S/041/60/012/003/008/011
Difference Equations With a Small Parameter   C111/C222

2) For $\varepsilon \to 0$, the moments of the kernel

(3) $\zeta_m = \frac{1}{m!} \sum\limits_{k=-\infty}^{\infty} k^m p_m$ $(m = 0, 1, 2, \ldots, N)$

are representable as

(4) $\zeta_m = \varepsilon^{n-m} \sum\limits_{r=0}^{N+1} \varepsilon^r a_m$ $(m = 0, 1, \ldots, n)$, $\zeta_{n+1} = \sum\limits_{r=0}^{N+1-n-1} \varepsilon^r a_{n+1}$

$(1 = 1, 2, \ldots, N - n)$

where $a_{n_0} \neq 0$. The number n determines the order of the differential

operator $L_0 = \sum\limits_{m=0}^{n} a_{mo} \frac{d^m}{dx^m}$ to which the difference operator P_ε degenerates

for $\varepsilon \to 0$. 3) There exist n_0 and n_1 $(n_0 + n_1 = n)$ so that on $|\lambda| = 1$ it

holds :
Card 2/4

$\dfrac{p_o(\lambda)}{(\lambda-1)^{n_1}(1-\lambda^{-1})^{n_o}} \neq 0$, $\operatorname*{ind}\limits_{|\lambda|=1} \dfrac{p_o(\lambda)}{(\lambda-1)^{n_1}(1-\lambda^{-1})^{n_o}} = 0$

where $\operatorname*{ind}\limits_{|\lambda|=1} \varphi(\lambda) = \frac{1}{2\pi i} \oint\limits_{|\lambda|=1} d_\lambda \arg \psi(\lambda)$. The equation $\varepsilon^{-n} P_\varepsilon u_\varepsilon = g$
with conditions given outside of $(0,1)$ and bounded for $\varepsilon \to 0$ is uniform-
ly solvable with respect to ε , i.e. for all sufficiently small ε it holds

$\| u_\varepsilon \| \leq K \| g \|$, where K does not depend on ε .
Under these assumptions the author constructs the asymptotic development
of the solution $u_\varepsilon(x)$ of (1) according to the method of M.I. Vishik and
L.A. Lyusternik (Ref. 1). He obtains

(24) $u_\varepsilon(x) = \sum\limits_{r=0}^{N} \varepsilon^r u_r(x) + \varepsilon^{n_o} \sum\limits_{s=0}^{N+n_1} \varepsilon^s v_0^- \left(\frac{x}{\varepsilon}\right) + \varepsilon^n \sum\limits_{s=0}^{N+n_0} \varepsilon^s v_s^+ \left(\frac{x-1}{\varepsilon}\right) + Z_\varepsilon(x)$,

Card 3/4

86026

S/020/60/135/003/004/039
C111/C222

Asymptotic Behavior of Certain Functionals in a Two-Dimensional Scheme of Wandering

$$\iint_E x p_{\mathcal{E}}(x,y)dx\ dy = \mathcal{E}a_{1,\mathcal{E}}\ ,\qquad \iint_E y p_{\mathcal{E}}(x,y)dx\ dy = \mathcal{E}a_{2,\mathcal{E}}\ ;$$

$$\iint_E x^r y^s p_{\mathcal{E}}(x,y)dx\ dy = b_{rs,\mathcal{E}}\qquad (2\leqslant r+s\leqslant N+3)\ .$$

Let the distribution $p_{\mathcal{E}}(x,y)$ be differentiable with respect to $\mathcal{E}$ so that

(3) $\quad p_{\mathcal{E}}(x,y) = p_0(x,y)+\sum_{k=1}^{N}\mathcal{E}^k p_k(x,y)+\mathcal{E}^{N+1}p_{\mathcal{E},N+1}(x,y)$

is valid where $p_0(x,y)$ is the density of the probability distribution with first moments being zero. Then for the moments it holds

(4) $\quad a_{i,\mathcal{E}} = \sum_{k=0}^{N}\mathcal{E}^k a_{ik}+\mathcal{E}^{N+1}a_{i,N+1,\mathcal{E}}\qquad (i=1,2),$

Card 2/6

86026

S/020/60/135/003/004/039
C111/C222

Asymptotic Behavior of Certain Functionals in a Two-Dimensional Scheme of Wandering

where $b_{110}b_{220}-b_{120}^2 > 0.$
Theorem: Under these assumptions it is

(5) $\quad u_{\mathcal{E}}(x,y;f) = \sum_{k=0}^{N}\mathcal{E}^k u_k(x,y)+\sum_{k=0}^{N-1}\mathcal{E}^{k+1}v_k(\frac{x}{\mathcal{E}};y)+0(\mathcal{E}^{N+1}),$

where the functions $u_k(x,y)$ can be determined successively from the elliptic differential equations

(6) $\quad L_0 u_0 \equiv \frac{1}{2}b_{110}\frac{\partial^2 u_0}{\partial x^2}+b_{120}\frac{\partial^2 u_0}{\partial x\partial y}+\frac{1}{2}b_{220}\frac{\partial^2 u_0}{\partial y^2}+a_{10}\frac{\partial u_0}{\partial x}+a_{20}\frac{\partial u_0}{\partial y}=0$

(7) $\quad L_0 u_k = -\sum_{r=1}^{k}L_r u_{k-r}\ ,$

where

Card 3/6

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PHASE I BOOK EXPLOITATION   SOV/5618

Gnedenko, Boris Vladimirovich, Vladimir Semenovich Korolyuk, and Yekaterina
Logvinovna Yushchenko

Elementy programmirovaniya (Programming Elements) Moscow, Fizmatgiz, 1961.
348 p. 25,000 copies printed.

Ed.: L. A. Solov'yeva; Tech. Ed.: N. Ya. Murashova.

PURPOSE: This textbook has been approved by the Ministry of Higher and Special
Secondary Education of the RSFSR for schools of higher education. It may
also be useful to members of scientific research institutes concerned with
computer programming.

COVERAGE: The book contains directions on the programming of automatic digital
computers. It reflects investigations made in the field of automation of
programming, solutions of logical problems by automatic digital computers,
and the operational method proposed by A. A. Lyapunov, Professor, whose
lectures at the Moscow University suggested to the authors the basis for
this textbook. No personalities are mentioned. There are 29 references,
all Soviet (including 3 translations).

Card 1/5

S/044/62/000/009/063/069
A060/A000

AUTHORS: Korolyuk, V.S., Yushchenko, K.L.

TITLE: Problems in theory and practice of programming

PERIODICAL: Referativnyy zhurnal, Matematika, no. 9, 1962, 59, abstract 9V374
("Zb. prats' z obchysl. matem. i tekhn.". T. I. Kyiv, AN URSR,
1961, 5 - 30; Ukrainian; Russian summary)

TEXT: A method of programming is set forth, based on the concept of the
addressing algorithm. The method proposed does not depend on the actual fea-
tures of automatic digital computers and admits the automatic realization of al-
gorithms by them.

Author's summary

[Abstracter's note: Complete translation]

Card 1/1

32904

S/194/61/000/011/017/070
D209/D302

9.7/00

AUTHOR: Korolyuk, V.S.

TITLE: Constructing algorithms of logical problems

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika,
               no. 11, 1961, 3, abstract 11 B15 (Tr. Vses. po vych-
               isl. matem. i primeneniyu sredstv vychisl. tekhn.,
               Baku, AN AzerbSSR, 1961, 23-35)

TEXT: It is shown that the basic difficulty in utilizing
computers for solving problems lies in the insufficient formaliza-
tion of both the original statement of problems and the processes
of their solution. A problem of algorithmization arises – i.e.
formalization of mathematical and logical conclusions leading to
their realization on computing machines. In order to solve this
problem it is necessary to work out a formal language for a descrip-
tion of algorithms which are to be realized on computing machines.
The existing algorithm theories are used. In order to state and

Card 1/2

16.6800 (1250,1327,1329)

33867
S/696/61/001/000/001/007
D251/D304

AUTHORS: Korolyuk, V. S. and Yushchenko, K. L.

TITLE: Questions of the theory and practice of programming

SOURCE: Akademiya nauk Ukrayinsk'koyi RSR, Obchyslyuval'nyy
            tsentr. Zbirnyk prats' z obchyslyuval'noyi matematyky
            i tekhniky. v. 1, 1961, 3-30

TEXT: The authors set out a scheme of programming which is based
on the concept of an address algorithm, and which is independent
of the particular features of the automatic digital computer (ADC)
and permits the automatic realization of the algorithms in the ADC.
The concepts of A. N. Kolmogorov (Ref. 7: UMN, v. 8, no. 4, 1953)
concerning programming are stated, and concrete examples of the al-
gorithms for the transformation of information are analyzed. The
problem of coding is considered. As the basic material a system S
of elements is taken among which structural relationships are es-
tablished. Examples of possible systems S are given. The concepts
of word, alphabet, code and coding system are explained, and the

Card 1/3

33867
S/696/61/001/000/001/007
D251/D304

Questions of the theory ...

method of obtaining a coding system for the problem of the theory
of normal algorithms of A. A. Markov (Ref. 1: Trudy matematichesko-
go in-ta im. Steklova, v. 42, 1954) is indicated. Although the
choice of a coding system for an actual problem will be determined
by the conditions of that problem, a general scheme that will be
sufficient for all problems which are of interest to the authors
is established as follows: A is an alphabet, and S_A the set of words
in A, is taken as the set of codes. Following A. P. Yershov (Ref.
4: Programmiruyushchaya programma dlya $B\Im CM$ (Programming Program
for BESM), Izd-vo AN SSSR, 1958), it is assumed that the choice of
algorithmic operations P is not fixed in S_A. The system of codes
is denoted by $\sigma(S_A, P)$. The initial condition of the problem is de-
fined by the reflection A of the codes of the set S into the same
set. A is defined either constructively or by a system of the form
$Aa = 'a$ (a and $'a \in S$) or by structural laws. In accordance with
existing iterative codes, a is called the address of $'a$. The "empty"
code Λ is defined as such that when a does not lie in the region

Card 2/3

35205
S/696/61/002/000/003/009
D299/D302

9,7100

AUTHORS: Korolyuk, V.S., Shkabara, K.O. and Yushchenko, K.L.

TITLE: Group operations of the computer "Kyyiv"

SOURCE: Akademiya nauk Ukrayins'koyi RSR. Obchyslyuval'nyy tsentr.
              Zbirnyk prats' z obchyslyuval'noyi matematyky i tekhniky,
              v. 2, 1961, 16-20

TEXT: Methods are described for performing group operations on the computer "Kyyiv". Group operations are special instructions, whereby the information about performing cyclical programs is given in compact form by means of a reduced number of codes. Group operations have usually the purpose of enabling fullest possible use of the backing store instead of the working store. Assume the cyclical program contains a group of addresses which vary from cycle to cycle according to a formula involving the value α of the initial shift, and the step p of re-addressing. The number pair (α, p) is called parameter. The necessary information for the cycle consists of: 1) The set of cycle operations in the initial

Card 1/2

S/696/61/002/000/003/009
D299/D302

Group operations of the ...

form; 2) address changes; 3) the parameter. In order to recognize the changed addresses, an additional 12-th digit is used. For this purpose, two operations are introduced: The start of the group operation (SGO), and the end of the group operation (EGO). Further, the encoding and use of these 2 operations is described, whence follows that the operation SGO together with the operation EGO, make it possible to encode cyclical programs which contain parameters on the permanent memory; therefore this method is particularly convenient for cyclical processes with renewals, as well as in the case of a fixed number of cycles. In order to realize the described processes, the control unit incorporates the following devices: A cycle register, an address register, an address adder and a matching device. As variable-access stores are in wide use which in case of need can be incorporated in the internal, backing store of the computer, provisions are made for one more group operation which makes it possible to insert any program into the backing store. The above operations can be performed by increasing only slightly the number of elements of the control unit of the computer. Two examples are given, illustrating the method. There are 3 Soviet-bloc references.

Card 2/2

16.6100

25769
S/052/61/006/003/005/006
C111/C222

AUTHOR: Korolyuk, V.S.

TITLE: The asymptotes of several functionals in a lattice random walk

PERIODICAL: Teoriya veroyatnostey i yeye primeneniye, v. 6, no. 3, 1961,
334 - 341

TEXT: Let $\xi_1, \xi_2, \ldots, \xi_n$ be a sequence of independent uniformly distributed lattice random variables with the maximal step $\varepsilon = 1/\sqrt{n}$.

Let $s_n = \sum_{r=1}^{n} \xi_r$. The author describes an algorithm for the construction of asymptotic developments for sufficiently smooth functionals of the sums s_k $(0 \leq k \leq n)$.

Given the probability distribution

$$p_k = P\left\{\xi_r = k\varepsilon\right\}, \quad k = 0 \pm 1, \pm 2, \ldots \quad , \qquad (1)$$

and let

Card 1/6

25769
S/052/61/006/003/005/006
C111/C222

The asymptotes of several functionals ...

$$p(\lambda) = \sum_{k} p_k \lambda^k \qquad (2)$$

be its generating function. The author introduces the distribution

$$R_n(x) = P\left\{a_- < s_r < a_+ , \; 0 \leq r \leq n , \; s_n = x\right\} ,$$

and considers the functional

$$u_\varepsilon(f) = \sum_{x} f(x) R_n(x) \qquad , \qquad (3)$$

where it is summed over all values of the region of definition of functions being under the sum sign. The author seeks an asymptotic development

$$u_\varepsilon(f) \sim \sum_{k=0}^{N} \varepsilon^k u_k$$

for which for $\varepsilon \to 0$ the left-hand and right-hand side differ by $O(\varepsilon^N)$.

The author obtains the following result : Let $f(x)$ have continuous

Card 2/6

The asymptotes of several functionals ...

derivatives up to the 9th order inclusively on $[a_-, a_+]$, and let it vanish together with the derivatives outside (a_-, a_+). Let exist the first six moments of the distribution (1), where

$$M\xi_r = 0 ; \quad D\xi_r = \frac{1}{n} = \varepsilon^2 ; \quad M\xi_r^m = \varepsilon^m c_m \ (m \geqslant 3) .$$

Then, for u_ε (f) , it holds the asymptotic formula

$$u^\varepsilon(f) \sim u_0 + \varepsilon u_1 + \varepsilon^2 u_2 \qquad , \qquad (4)$$

where u_0, u_1, u_2 are values of the functions $u_0(x,t)$, $u_1(x,t)$ and $u_2(x,t)$ in the point $x = t = 0$. The function $u_0(x,t)$ is a solution of

$$L_0 u_0 = \frac{1}{2} \frac{\partial^2 u_0}{\partial x^2} + \frac{\partial u_0}{\partial t} = 0 \qquad (5) .$$

which for $0 \leqslant t < 1$ satisfies the conditions

Card 3/6

The asymptotes of several functionals ... C111/C222

$$u_0(a_-,t) = u_0(a_+,t) = 0 , \Big\}$$
$$u_0(x, 1) = f(x) ; \quad \Big\}$$

(6)

$u_1(x,t)$ is a solution of

$$\mathbf{L}_0 u_1 = - \frac{c_3}{6} \frac{\partial^3 u_0}{\partial x^3}$$

(7)

which for $0 \leq t < 1$ satisfies

$$u_1(a_\pm,t) = - \frac{p'_\pm(1)}{p_\pm(1)} \frac{\partial u_0(a_\pm,t)}{\partial x} , \Big\}$$
$$u_1(x,1) = 0 ; \quad \Big\}$$

(8)

$u_2(x,t)$ is a solution of

Card 4/6

25769
S/052/61/006/003/005/006
The asymptotes of several functionals ...   C111/C222

$$L_0 u_2 = -\frac{c_3}{6}\frac{\partial^3 u_1}{\partial x^3} - \frac{c_4}{24}\frac{\partial^4 u_0}{\partial x^4} + \frac{1}{2}\frac{\partial^2 u_0}{\partial t^2} \tag{9}$$

which for $0 \leq t < 1$ satisfies

$$\left.\begin{array}{l} u_2(a_{\pm},t) = \pm\frac{p'_+(1)}{p_+(1)}\frac{\partial u_1(a_+,t)}{\partial x} - \frac{1}{2}\frac{p'_+(1) + p''_+(1)}{p_+(1)}\frac{\partial^2 u_0(a_+,t)}{\partial x^2}\,, \\ \\ u_2(x,1) = 0\,. \end{array}\right\} \tag{10}$$

Here $p_-(\lambda)$ and $p_+(\lambda)$ are analytic functions being different from zero outside and inside the unit circle, respectively. They are determined from the development of the generating function

$$p(\lambda) - 1 = \left(\lambda - 2 + \frac{1}{\lambda}\right)p_+(\lambda)p_-(\lambda)\,. \tag{11}$$

The following formulas are valid :

$$\ln p_-(\lambda) = -\frac{1}{2\pi i}\oint_{|\varsigma|=1}\frac{\ln\left[(p(\varsigma)-1)(\varsigma - 2 + \varsigma^{-1})^{-1}\right]}{\varsigma - \lambda}d\varsigma \quad (|\lambda| > 1),(12)$$

Card 5/6

25769

The asymptotes of several functionals ...

$$\ln p_{+}(\lambda) = \frac{1}{2\pi i} \oint_{|\zeta|=1} \frac{\ln\left[(p(\zeta)-1)(\zeta - 2 + \zeta^{-1})^{-1}\right]}{\zeta - \lambda} d\zeta \quad (|\lambda| < 1). \qquad (13)$$

The author mentions A.N. Kolmogorov. There are 7 Soviet-bloc references.

SUBMITTED: March 5, 1960

Card 6/6

ZOLOTAREV, V. M. (Moscow); KOROLYUK, V. S. (Kiyev)

Comments on B. V. Gnedenko's hypothesis. Teor. veroiat. i ee prim.
6 no.4:469-474 '61.   (MIRA 14:11)
(Distribution(Probability theory))

KU IN , . . .; THA N , ...

. . n the lgorism of construction bound in 1 . .
. . a. . 16 no.5:1 -156 - '61.   (. . .)
                (Algori)
                (Bound r)

16.6200

AUTHORS: Korolyuk, V. S., Gusak, D. V.

TITLE: On the asymptotic behavior of distributions of maximum
            deviation in a Poisson process

PERIODICAL: Ukrainskiy matematicheskiy zhurnal, v. 14, no. 2, 1962,
            138-144

TEXT: The authors investigate the asymptotic behavior for $\lambda \to \infty$ of the
maximum deviation distributions

$$\Pi_\lambda(k,t;z_-,z_+) = \mathcal{P}\left\{\xi_t = k;\ \max_{0\leqslant\tau\leqslant t}(\xi_\tau - \lambda\tau)/\sqrt{\lambda\tau} < z_+;\ \min_{0\leqslant\tau\leqslant t}(\xi_\tau - \lambda\tau)/\sqrt{\lambda\tau} > z_-\right\}$$

of a separable Poisson process

$$\mathcal{P}\left\{\xi_t = k\right\} = e^{-\lambda t}(\lambda t)^k/k! \qquad (k = 0,1,2,\ldots).$$

Asymptotic representations of the form

Card 1/2

/6.6100

AUTHOR: Korolyuk, V.S.

TITLE: On the asymptotic behavior of maximum deviation
            distributions

TEXT: The algorithm described by the author in (Ref. 1 : Teoriya
veroyatnostey i yeye primeneniya, 6, v.3 (1961)) for the construction of
asymptotic expansions for the maximum deviation distributions of normed
sums of independent equally distributed random variables is improved as
follows. The starting point of the algorithm is the boundary value
problem

$$P_\varepsilon u_\varepsilon (k,x) \equiv \int u_\varepsilon (k, x - \varepsilon y) d P (y) - u_\varepsilon (k + 1, x) = 0 \qquad (2)$$

$$u_\varepsilon (0,x) = 0$$

$$u_\varepsilon (k,x) = p_\varepsilon (k,x) , \quad x \notin \left(z_- \left(\frac{k}{n} \right) , z_+ \left(\frac{k}{n} \right) \right) \qquad (1 \leq k \leq n) . \qquad (3)$$

Card 1/5

On the asymptotic behavior of   ...

S/020/62/142/003/004/027
C111/C333

Under the assumption that the improved local limit value theorem holds, i.e. that

$$p_\varepsilon (k,x) = p_0(t,x) + \sum_{r=0}^{N+2} \varepsilon^r p_r(t,x) + O(\varepsilon^{N-3}) \quad , \qquad (5)$$

now it is proved :

Theorem : If the expansion (5) exists and if the curves $z_-(t)$, $z_+(t)$ are sufficiently smooth, then the solution of (2), (3) has the asymptotic expansion

$$u_\varepsilon (k,x) = \sum_{r=0}^{N} \varepsilon^r u_r(t,x) +$$

$$+ \sum_{r=0}^{N+1} \varepsilon^{r+1} \left[v_r^- \left(t, \frac{x-z_-}{\varepsilon}\right) + v_r^+ \left(t, \frac{z_+ - x}{\varepsilon}\right) \right] + O(\varepsilon^N) \quad , \qquad (6)$$

the regular terms $u_r(t,x)$ of which are determined from

$$L_0 u_0 = \frac{1}{2} \frac{\partial^2 u_0}{\partial x^2} - \frac{\partial u_0}{\partial t} = 0 ; \qquad (7)$$

Card 2/5

On the asymptotic behavior of maximum ...

$$L_0 u_r = - \sum_{m=0}^{r-1} L_{r-m} u_m \quad (m = 1,2,\ldots,N) \tag{8}$$

with the conditions

$$u_r(0,x) = 0, \quad z_-(0) < x < z_+(0) \quad (0 \leqslant r \leqslant N) \; ; \tag{9}$$

$$u_0(t, z_{\pm}(t)) = p_0(t, z_{\pm}(t)) \; ; \tag{10}$$

$$u_r(t, z_{\pm}(t)) = p_r(t, z_{\pm}(t)) - v_{r-1}^{\pm}(t,0) \quad (1 \leqslant r \leqslant N) \tag{11}$$

while the boundary layers $v_r^{\pm}(t,s)$ are (for $s \geq 0$) the solutions of the integral equations

$$P_0^{\pm} v_0^{\pm} = \int v_0^{\pm}(t, s \pm y) dP(y) - v_0^{\pm}(t,s) = 0 \; ; \tag{12}$$

$$P_0^{\pm} v_r^{\pm} = \sum_{m=1}^{r} P_m v_{r-m}^{\pm} \quad (r = 1,2,\ldots, N + 1) \tag{13}$$

Card 3/5

On the asymptotic behavior of maximum ...   S/020/62/142/003/004/027
C111/C333

which decrease to zero for $s \to \infty$ with the prescribed values for $s < 0$

$$V_r^{\pm}(t,s) = V_r^{\pm}(t,0) - \sum_{y=1}^{r+1} \frac{(\mp s)^{y}}{y!} \frac{\partial^{y}}{\partial x^{y}} [u_{r+1-y}(t,x) - p_{r+1-y}(t,x)]_{x=z_{\pm}} . \quad (14)$$

Here it holds

$$L_{2k-1}u \equiv -\frac{\alpha_{2k+1}}{(2k+1)!} \frac{\partial^{2k+1}u}{\partial x^{2k+1}}; \quad L_{2k}u \equiv \frac{\alpha_{2k}}{(2k)!} \frac{\partial^{2k}u}{\partial x^{2k}} - \frac{1}{k!} \frac{\partial^{k}u}{\partial t^{k}} \quad (k \geqslant 1); \quad (15)$$

$$P_{2k}V \equiv \frac{1}{k!} \frac{\partial^{k}V}{\partial t^{k}}, \quad P_{2k+1}V \equiv 0 \quad (k \geqslant 1). \quad (16)$$

The proof is carried out as in (Ref. 1) with the aid of upper and lower functions.

Card 4/5

functions.
There are 2 Soviet-bloc references.

ASSOCIATION: Institut matematiki Akademii nauk USSR (Institute of
                Mathematics of the Academy of Sciences UkrSSR)

PRESENTED: August 28, 1961, by A.N. Kolmogorov, Academician
SUBMITTED: July 1, 1961

Card 5/5

$K_{1} \; 6/00$

AUTHOR: Korolyuk, V. S.   (Kiyev)

TITLE: Asymptotic analysis of the distribution for maximum devia-
            tions in a lattice random walk

PERIODICAL: Teoriya veroyatnostey i yeye primeneniya, v. 7, no. 4, 1962,
            393 - 409

TEXT: $\xi_1, \xi_2, \dots, \xi_n$ denote uniformly distributed independent lattice $/\beta$
random quantities; the maximum lattice step is equal to unity. Further-
more,

$$\eta_k = \varepsilon \sum_{r=1}^{k} \xi_r, \quad 0 \le k \le n; \quad \eta_0 = 0, \quad \varepsilon = \frac{1}{\sqrt{n}} .$$

The following distributions are considered:

$$B_\varepsilon^+ (z,k) = P\{ \cdot_k < z: \; 0 \le k \le n \mid \eta_n = x \};$$
$$B_\varepsilon^+ (z) = P\{ \cdot_k \quad z; \quad 0 < k < n \};$$
$$B_\varepsilon (z_-, z_+, x) = P\{ z_- < \eta_k < z_+; \; 0 \le k \le n \mid \eta_n = x \};$$

Card 1/2

Asymptotic analysis of the ...

S/052/62/007/004/001/003
B172/B112

$$B_{\varepsilon}(z_-, z_+) = P\{z_- < \eta_k < z_+; \quad 0 \le k \le n\}.$$

As shown by Kolmogorov (Izv. AN SSSR, ser. matem., 15, (1931), 805 - 808
and ser. fiz.-mat., 17, 362 - 372) the behavior of such functionals
for $n \to \infty$, can be described under certain conditions, by the solutions
to partial differential equations. The algorithm for constructing asymp-
totic expansions for the distributions $B_{\varepsilon}^+(z|x), \ldots, B(z_-, z_+)$, described
in this paper, is obtained by using those results of an earlier paper by
the author (Teoriya veroyat. i yeye primen. IV, 4, (1959), 369 - 397) that
concern the asymptotic analysis of an equation with a small parameter.
The application of this algorithm gives improved limiting theorems for the
distribution of the maximum deviations.

ASSOCIATION: Institut matematiki Akademii nauk USSR (Mathematics Institute
               of the Academy of Sciences UkrSSR)

SUBMITTED: November 30, 1960

Card 2/2

KOROLYUK, V.S.

Problem for an integral equation on a semiaxis. Dop. AN URSR
no.9:1127-1130   '62.   (MIRA 18:4)

1. Institut matematiki AN UkrSSR.

/

GIKHMAN, I.I.; KOLMOGOROV, A.N.; KOROLYUK, V.S.

    Boris Vladimirovich Gnedenko; on his 50th birthday. Usp.
    mat.nauk 17 no.4:191-200 '62.   (MIRA 15:8)
                (Gnedenko, Boris Vladimirovich, 1912-)

KOROLYUK, V.S. (Kiyev); GUSAK, D.V. (Kiyev)

    Asymptotic behavior of the distributions of maximum deviations
in a Poisson process. Ukr.mat.zhur. 14 no.2:138-144 '62.
                                  (MIRA 15:11)

    (Difference equations)   (Boundary value problems)

MITROPOL'SKIY Yu.A.,otv.red.; BEREZANSKIY, Yu.M., red.; KOROLYUK,
    V.S., red.; PARASYUK, O.S., red.; SOKOLOV, Yu.D., red.;
    FESHCHENKO, F.F., red.; FIL'CHAKOV, P.F., red.; BREUS, K.A.,
    red.; MEL'NIK, T.S., red.; BEREZOVSKAYA, D.N., tekhn. red.

[Approximate methods of solution of differential equations]
Priblizhennye metody resheniia differentsial'nykh uravnenii.
Kiev, Izd-vo AN USSR, 1963. 153 p.   (MIRA 17:3)

1. Akademiya nauk URSR, Kiev. Instytut matematyky.

LYUBCHENKO, Georgiy Georgiyevich; SERGIYENKO, Ivan Vasil'yevich;
    KOROLYUK, V.S., retsenzent; YUSHCHENKO, Ye.L., retsenzent;
    IL'ICHEVSKIY, S.A., red.

[Computers and programming] Matematicheskie mashiny i prog-
rammirovanie. Kiev, Izd-vo Kievskogo univ., 1963. 219 p.
                                      (MIRA 17:7)

KOROLYUK, V. S.

Transactions of the Sixth Conference (Cont.)   SOV/6371

7. Zolotarev, V. M. On a New Viewpoint Regarding Limit
    Theorems Which Take Large Deviations Into Account   43

8. Analog of an Asymptotic Edgeworth-Kramer Expansion for
    Approximating by Stable Laws of Distribution   49

9. Korolyuk, V. S. On a Method for Constructing Asymptotic
    Expansions   51

10. Kubilyus, I. P. On Some Problems of the Probabilistic
    Number Theory   57

11. Mitalauskas, A. A. Local Limit Theorems for the Convergence
    of Sums of Independent Random Variables Toward a Stable
    Law   69

12. Petrov, V. V. Asymptotic Expansions for Derived Functions
    of the Distribution of a Sum of Independent Random
    Quantities   71

ACCESSION NR: AT4039217   S/0000/63/000/000/0043/0048

AUTHOR: Korolyuk, V. S.

TITLE: Asymptotics of certain functionals in boundary problem of a two-dimension-
al random walk

SOURCE: AN UzSSR. Institut matematiki. Predel'ny*ye teoremy* teorii veroyatnostey,
(Limit theorems for the theory of probability). Tashkent, Izd-vo AN UzSSR, 1963,
43-48

TOPIC TAGS: asymptotic property, boundary problem, boundary value problem,
functional equation, Markov process, Markov chain, random process, random walk

ABSTRACT: The paper gives a formulation of algorithms for the asymptotic expan-
sions in boundary problems of a two-dimensional random walk, obtained by a method
of analysis of the equations (containing a small parameter) for the unknown dis-
tributions. This method has been described by the author in a previous paper. The
distributions mentioned are those of the maximum deviations of sums of independent,
uniformly-distributed, random variables. The author first considers a random walk
in the (x_1, x_2)-plane such that the position of the random point is defined by a
sequence (containing a small parameter) of random vectors forming a simple, homo-

Card   1/2

L 54566-65   EWT(d)/EPF(n)-2/EWP(v)/EWP(k)/EWP(h)/EWP(1)   Po-4/Po-4/Pf-4/Pg-4/
Pu-4/Pk-4/Pl-4 AP5012798 WW/BC   UR/0378/65/000/002/0098/0101
ACCESSION NR: AP5012798   505-62

AUTHOR: Ivanenko, V. I., Korolyuk, V. S.

TITLE: A method for the synthesis of optimum systems of automatic control

SOURCE: Kibernetika, no. 2, 1965, 98-101

TOPIC TAGS: optimum control, automatic control system, control system synthesis,
control system optimization, breakdown detection

ABSTRACT: During the operation of complex systems consisting of a large number of
operating components, there is a need for a system for the detection and control of break-
downs. This automatic control must be organized in such a way that its operating
algorithm is optimized in a definite sense. The present article discusses one of the
possible formulations of the synthesis of such an optimum control system and applies it to
a combination of a single operating component and control unit. This control setup mini-
mizes the average cost of control, taking into account the cost of operation of the control
devices and the penalty for the absence of control during a faulty operation of the operating
component. The results can be extended directly to the case when the operating system
contains N identical operating components with equal distributions of continuous operating

Card   1/2

L 54566-65
ACCESSION NR: AP5012798

time. An expression is given for the then needed number of control devices. Orig. art.
has: 31 formulas.

ASSOCIATION: None

SUBMITTED: 30Jan65   ENCL: 00   SUB CODE: IE

NO REF SOV: 002   OTHER: 002

2/2

Card

L 13920-66   EWT(d)/EWT(1)/EWA(h)   IJP(c)   TG

ACC NR: AP6001202   SOURCE CODE: UR/0378/65/000/005/0055/0059

AUTHOR: Korolyuk, V. S., (Doctor of physico-mathematical sciences, Section Head);
Tomusyak, A. A., (Aspirant)

ORG: [Korolyuk] Institute of Mathematics, AN UkrSSR (Institut matematiki AN UkrSSR);
[Tomusyak] Kiev Pedagogical Institute (Kiyevskiy pedagogicheskiy institut)

TITLE: The description of the operation of redundant systems by semi-Markovian processes

SOURCE: Kibernetika, no. 5, 1965, 55-59

TOPIC TAGS: reliability engineering, Markov process, automatic control

ABSTRACT: Although the reliability analysis of redundant systems is presently carried out by
probabilistic theoretical methods the authors believe that the most promising approach to the
description of the functioning of redundant systems is by means of Markovian processes. A
method is presented to establish appropriate semi-Markovian processes for various redundant
systems consisting of operating, reserve, and restoring devices. The main results of this
section are in the form of the proof of two theorems. This is followed by a description of the
functioning of redundant systems using the semi-Markovian processes. The determination of
the length of operation of the restoring devices is also given. Orig. art. has: 40 formulas.

SUB CODE: 09, 12/ SUBM DATE: 19May65/ ORIG REF: 004/ OTH REF: 003

Card 1/1   UDC: 519.217

BOROVKOV, A.A.; KOROLYUK, V.S. (Kiyev)

Results of asymptotic analysis in problems with boundaries.
Teor. veroiat. i ee prim. 10 no.2:255-266 '65.

(MIRA 18:6)

KOROLYUK, V.S. (Kiyev)

Period of a semi-Markov process in a fixed set of states.
Ukr. mat. zhur. 17 no.3:123-128 '65.   (MIRA 18:6)

L 20690-66   EWT(d)/T/EWP(1)   IJP(c)

ACC NR: AP6011990   SOURCE CODE: UR/0041/65/017/003/0123/0128

AUTHOR: Korolyuk, V. S.

ORG: none

TITLE: Time of existence of a semi-Markovian process in a fixed set of states

SOURCE: Ukrainskiy matematicheskiy zhurnal, v. 17, no. 3, 1965, 123-128

TOPIC TAGS: queueing theory, reliability theory, Markov process, stochastic process

ABSTRACT: The functioning of various systems which are studied in queueing theory and reliability theory may be described by a semi-Markov process with a finite number of states. Also some problems in queueing theory and reliability theory lead to the determination of the time of existence of a semi-Markov process in a fixed subset of states. This work shows how this problem is reduced to the solving of stochastic equations. The author thanks A. V. Skorokhod for valuable discussions in this work. Orig. art. has: 25 formulas. [JPRS]

SUB CODE: 12 / SUBM DATE: 25Feb65 / ORIG REF: 003 / OTH REF: 002

Card 1/1

FISCHER, Antal,; KOROM-BENDE, Sandorne.

Formaldehydogenic steroid determination. Kiserletes orvostud. 7
no.1:96-98 Jan 55.

1. Budapesti Orvostudomanyi Egyetem III. sz. Belklinikaja.
        (STEROIDS, determination
            formaldehydogenic, determ.)

\

FORGACS, Jozsef, dr.; KOVACS, Ervin, dr.; KOROM-BENDE, Sandor, dr.

Observation and therapy of obstetric thromboembolism.
Magy. noorv. lap. 18 no.4:236-241 July 55.

1. A Honved Tiszti Korhaz szulo-nobeteg osztalyanak es a
Tetenyi uti Korhaz szulo-nobeteg osztalyanak kozlemenye.
        (THROMBOEMBOLISM, in pregn.
            diag. & ther. (Hun))
        (PREGNANCY, compl.,
            thromboembolism, diag. & ther. (Hun))

SOV/62-59-4-9/42

5(4)

AUTHORS: Zhdanov, S. P., Koromal'di, Ye. V.

TITLE: On Structural Peculiarities of Sodium Boron Silicate Glasses
                Related to Their Chemical Resistance (O strukturnykh
                osobennostyakh natriyevoborosilikatnykh stekol v svyazi s ikh
                khimicheskoy ustoychivost'yu). Communication 1. Investigation of
                the Chemical Resistance of Some Low-alkali Sodium Boron Silicate
                Glasses and of the Structure of Their Lixiviation Products
                (Soobshcheniye 1. Issledovaniye khimicheskoy ustoychivosti
                nekotorykh maloshchelochnykh natriyevoborosilikatnykh stekol i
                struktury produktov ikh vyshchelachivaniya)

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk,
                1959, Nr 4, pp 626-636 (USSR)

ABSTRACT: In the present work the structure of the porous products obtained
                by a treatment of low-alkali sodium boron silicate glasses with
                hydrochloric acid has been investigated. The dissolving rate of
                the glass components owing to the selective solubility of the
                glass was determined for similar samples. From the results ob-
                tained a relationship between the chemical resistance of these
                glasses and the structure of their lixiviation products has been

Card 1/4

SOV/62-59-4-9/42

On Structural Peculiarities of Sodium Boron Silicate Glasses Related to Their Chemical Resistance. Communication 1. Investigation of the Chemical Resistance of Some Low-alkali Sodium Boron Silicate Glasses and of the Structure of Their Lixiviation Products

discovered and the dependence of the chemical resistance on the composition and heat treatment has been clarified. Three batches of glass with equal SiO_2 contents of 60%, 65%, and 70% and varying Na_2O contents from 0-4% were investigated. The addition of smaller amounts of sodium oxide to alkali-free glasses increases initially the chemical resistance, which is strongly reduced, however, by a further increase in Na_2O content. This has been observed with all glasses investigated. Among hardened glasses, those containing 2% Na_2O have the highest resistance (Fig 1). Annealed glasses have the highest chemical resistance at 3% Na_2O. An increase in alkali oxide content (up to 2-3%) does not only retard the lixiviation but in some cases even reduces the limiting amounts of B_2O_3 and Na_2O entering into solution (Tables 1 and 2, Fig 2). During an analysis of the results of the absorption investigation the overall shape of the isotherms

Card 2/4

On Structural Peculiarities of Sodium Boron Silicate Glasses Related to Their   SOV/62-59-4-9/42
Chemical Resistance. Communication 1. Investigation of the Chemical Resistance
of Some Low-alkali Sodium Boron Silicate Glasses and of the Structure of Their
Lixiviation Products

(Figs 3 and 4) permits already the conclusion that the porous
glasses vary widely in structure. Numerical results are given in
table 3. Adsorption isotherms having a wide hysteresis loop are
characteristic of glasses containing 1% and, particularly, 2%
Na_2O. These structures can be considered transitional between
homogeneous, fine-porous (alkali-free glasses) and coarse-
porous structures (4% Na_2O). Isotherms of glasses containing 3%
Na_2O show a further transition from fine-porous to coarse-porous
structures. Adsorption isotherms of annealed glasses (Fig 4)
have generally the same characteristics. A displacement of the
hysteresis loop in the direction of a higher p/p_s is character-
istic of the isotherms of annealed glasses. The authors ap-
preciate the interest shown by Professor E. K. Keler. There are
4 figures, 3 tables, and 14 references, 13 of which are Soviet.

Card 3/4

On Structural Peculiarities of Sodium Boron Silicate Glasses Related to Their   SOV/62-59-4-9/42
Chemical Resistance. Communication 1. Investigation of the Chemical Resistance
of Some Low-alkali Sodium Boron Silicate Glasses and of the Structure of Their
Lixiviation Products

ASSOCIATION: Institut khimii silikatov Akademii nauk SSSR (Institute of
               Silicate Chemistry of the Academy of Sciences, USSR)

SUBMITTED: July 9, 1957

Card 4/4

5 (2)

AUTHORS: Zhdanov, S. P., Koromal'di. Ye. V.   SOV/62-59-5-8/40

TITLE: On the Structural Characteristics of Sodium Boron Silicate
              Glasses Associated with   Their Chemical Stability (O strukturnykh
              osobennostyakh natriyevoborosilikatnykh stekol v svyazi s ikh
              khimicheskoy ustoychivost'yu). Communication 2. On the Causes
              of the Great Changes of Chemical Stability of Sodium Boron
              Silicate Glasses Depending on the Composition and Their Thermal
              History (Soobshcheniye 2. O prichinakh rezkikh izmeneniy khimi-
              cheskoy ustoychivosti natriyevoborosilikatnykh stekol v zavisi-
              mosti ot sostava i ikh termicheskoy istorii)

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk,
              1959, Nr 5, pp 811 - 818 (USSR)

ABSTRACT: In the previous communication the authors carried out the in-
              vestigations mentioned in the title with weakly alkaline so-
              dium boron silicate glasses only, and but a general evaluation
              of the results obtained without a comparison with other invest-
              igations results was given. The comparison is carried out in
              the present communication; moreover, additional experimental
              investigations of sodium boron silicate glasses with a high so-
Card 1/3   dium oxide content are carried out. The dependence of the in-

On the Structural Characteristics of Sodium Boron   SOV/62-59-5-0/40
Silicate Glasses **Associated with** Their Chemical
Stability. Communication 2. On the Causes of the Great Changes of Chemical
Stability of Sodium Boron Silicate Glasses Depending on the Composition and
Their Thermal History

crease of the selective solubility of sodium boron silicate glasses on the porosity of the leached layer was used in the determination of the chemical stability of the glasses, i.e. the increase of a porous film is measured, which is formed by the effect of acids and by the selective solubility of the individual components of the glass in the acids; this is used as measurement of stability. For this reason the quantity of B_2O_3 and

Na_2O which is formed at the beginning of the HCl effect depending on the size of the radius of the pores of the leached layer (Table 1) is measured for variously manufactured glass (tempered and annealed), as well as the variation of the radius of the pores depending on the Na_2O content of the initial glass (Table 2); moreover, the increase of thickness of the porous film of opalescent and transparent glasses of the same composition is determined as well as the isothermal line of adsorption of ethanol on porous glass surfaces. All investigations

Card 2/3

On the Structural Characteristics of Sodium Boron   SOV/62-59-5-8/40
Silicate Glasses Associated with Their Chemical
Stability. Communication 2. On the Causes of the Great Changes of Chemical
Stability of Sodium Boron Silicate Glasses Depending on the Composition and
Their Thermal History

        show that the chemical stability   of the glasses investigated
depends neither on the variously strong or weak solubility of
the glass components contained by them nor on the diffusion
rate of the reaction products in the leached layer, the latter
depending on the dimensions of the pores of this layer. The
chemical stability of the glasses investigated, which varies
considerably with the change of their composition and thermal
treatment, is directly related to the structural change of the
porous products which are formed with the acid treatment of
the glass. There are 6 figures, 2 tables, and 17 references,
15 of which are Soviet.

ASSOCIATION: Institut khimii silikatov Akademii nauk SSSR (Institute of
Silicate Chemistry of the Academy of Sciences, USSR)

SUBMITTED: July 9, 1957
Card 3/3

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AUTHORS: Zhdanov, S. P. and Koromal'di, Ye. V.

TITLE: Selective sorption on porous glasses

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 138, no. 4, 1961, 870-873

TEXT: The authors had shown earlier (Ref. 1:Izv.AN SSSR,OKhN,1959,No.4,
626, No.5,811,1959; Ref. 2: S. P. Zhdanov, Dissertation,Inst.khim.
silikatov (Institute of Silicate Chemistry) L.,1959) and in the present
paper that selective sorption is not only a specific feature of porous
crystals (zeolites) but is also characteristic of some porous glasses.
These glasses may act as typical molecular screens. They are produced by
lixiviation of two-component alkali silicate- or alkali borosilicate
glasses by acid solutions. The authors thank Yu. A. Shmidt for supplying
most of the glass specimens. Before sorption, they were heated in vacuo
to 100 or 200°C. The authors studied the sorption of CH_3OH and C_4H_9OH,
and that of C_2H_5OH. They conclude from the absorbed quantities of water
and CH_3OH having small molecules that they are absorbed much more strongly

Card 1/4

24057
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B103/B203

Selective sorption on porous glasses

than the large molecules of C_2H_5OH, of the hydrocarbons, and particularly
of C_4H_9OH. Therefore, selective sorption by porous glass is due to very
fine pores in the glass whose diameter is comparable to the size of simple
molecules. Since glasses no. 1 and 3 readily absorb water (molecular
diameter d = 2.8 Å) but no nitrogen (d = about 4 Å), the authors suppose
a diameter of pores in the glass between 2.8 and 4 Å. Glass no. 2 has
larger pores but they are also so fine that most of them remain
inaccessible to comparatively small (d = 5.8 Å) molecules of C_4H_9OH and
of C_5 alkanes. The authors compare the formation of uniform and fine
pores in glass with the "cages" and canals in zeolite crystals where they
are formed by dehydration under heating. In the glasses, however, the
oxygen packing is so dense that not only the "cages" occupied by alkaline
cations but also the free "cages" of the silicon oxygen lattice in the
glass remain inaccessible even to so small molecules as those of water.
The lixiviation process starts with the exchange of alkali cations by
acid protons:

$$-\overset{|}{\underset{|}{Si}}-O^-Na^+ + H^+ \longrightarrow -Si-OH + Na^+$$
glass solution   glass   solution
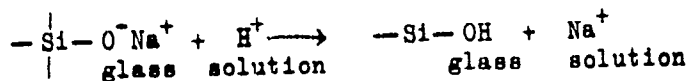
Card 2/4

SAMSONOVA, I.N.; ZHDANOV, S.P.; BUNTAR', N.N.; KOROMAL'DI, Ye.V.;
GOLUBEVA, V.A.

Determination of the content of n-paraffins in the gasoline
distillates of crude oil by the method of molecular sieves.
Zhur. prikl. khim. 36 no.11:2502-2506 N '63.

(MIRA 17:1)

1. Leningradskiy gosudarstvennyy universitet imeni A.A.
Zhdanova i Institut khimii silikatov AN SSSR.

L 11867-66   EWT(m)/EWP(e)/EWP(b)   GS/WH

ACC NR: AT6000478   SOURCE CODE: UR/0000/65/000/000/0122/0126

AUTHOR: Zhdanov, S. P.; Yastrebova, L. S.; Koromal'di, Ye. V.; Khvoshchev, S. S.

ORG: None

TITLE: Structure of the silicon-oxygen framework of alkali metal silicate glasses as determined by studies of products of their leaching

SOURCE: Vsesoyuznoye soveshchaniye po stekloobraznomu sostoyaniyu. 4th, Leningrad, 1964. Stekloobraznoye sostoyaniye (Vitreous state); trudy soveshchaniya, Leningrad, Izd-vo-Nauka, 1965, 122-126

TOPIC TAGS: silicate glass, glass property

ABSTRACT: Acid leaching of alkali metal silicate glasses has shown that porous glasses the pores of which are due to the removal of alkali metal cations are always formed. The existence of a definite relationship between the alkali metal oxide content in the initial glass and the volume and size of the pores indicates that Si-O-Si bonds are not broken or rearranged during the leaching. Disilicic acid is formed by a simple substitution of H^+ ions for Na^+ ions:

$$-\overset{|}{\underset{|}{Si}} - \overline{O}Na^+ + H^+ \rightarrow -\overset{|}{\underset{|}{Si}} - OH + Na^+$$
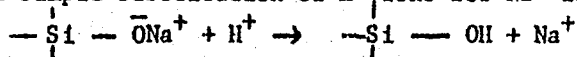
Card 1/2   crystal   solution   crystal   solution

L 11867-66

ACC NR: AT6000478

the silicon-oxygen network remaining unaltered (as shown by x-ray diffraction spectra). The proposed scheme of the leaching process is consistent with the concept of their homogeneous structure. It is postulated that in inhomogeneous sodium silicate glasses with a low Na_2O content the regions of preferential localization of $- Si - O^-R^+$ bonds are not separated by silica interlayers but linked to one another, since such interlayers would block the leaching of such inhomogeneous glasses. Orig. art. has: 5 figures and 2 tables.

SUB CODE: 11, 07 / SUBM DATE: 22May65 / ORIG REF: 007

jw
Card 2/2

KOROMBEL, Bogumil

Reduction of apartment building construction costs as seen
from the example of the city of Krakow. Przegl techn 84 no.26:
6,9.30-63.

1. Dyrektor Miejskiego Zarzadu Dyrekcji Budowy Osrodkow
Robotniczych Krakow.

KOROMKA, M.G.

SCIPIADES, E., KOROMKA, M. G.

Farris' rat reaction in determination of human ovulation time. Magy. noorv. lap. 13:6, June 50. p. 190-9

1. Second Women's Clinic (Acting Head—Dr. Imre Zoltan), Budapest University.

CLML 19, 5, Nov., 1950

NYIREDY, Geza, dr.; ORBAN, Tibor, dr.; KOROMPAI, Erzsebet, dr.

Contribution to the pathogenesis of polycystic lungs. Tuberkulozis 14 no.3:81-83 Mr '61.

1. A Budapesti Orvostudomanyi Egyetem Tudogyogyaszati Klinikajanak (igazgato: Kovats Ferenc dr. az orvostudomanyok doktora), a Janos korhaz Rendelointezet (igazgato: Tako Jozsef dr.) Szemeszeti es I Belosztalyanak kozlemenye.

(LUNG DISEASES etiol)

KOROMPAI, Ivan

Production technology of the Zsolca Factory of Building elements.
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KOROMPAI, Viktor, Dr, veterinary specialist, retired (nyugalmazott szak-
allatorvos), Gyula, [affiliation not given].

"The Morphology and Pseudo Stones of the Glans Penis of Stallions."

Budapest, Magyar Allatorvosok Lapja, Vol 18, No 9, Sept 63, pages 362-363.

Abstract: The characteristic anatomical forms of the glans penis and co-
rona glandis of stallions in states of relaxation and extension are described
by the author, in detail. The pseudo stones are described as to their appear-
ance and the mechanism of their development discussed. No references.

KOROMPAY, Ede, tanar (Budapest)

On the racial theory. Term tud koal 5 no.8:340-341 Ag '61.